



Fact Sheet # 4: Low Impact Development (LID)

- 1) Low Impact Development (LID) is an innovative stormwater management approach with a basic principle that is modeled after nature: manage rainfall at the source using uniformly distributed decentralized micro-scale controls. LID's goal is to mimic a site's predevelopment hydrology by using design techniques that infiltrate, filter, store, evaporate, and detain runoff close to its source.

Techniques are based on the premise that stormwater management should not be seen as stormwater disposal. Instead of conveying and managing / treating stormwater in large, costly end-of-pipe facilities located at the bottom of drainage areas, LID addresses stormwater through a variety of methods through a typical new development. These landscape features, known as Integrated Management Practices (IMPs), are the building blocks of LID. Almost all components of the urban environment have the potential to serve as an IMP. This includes not only open space, but also rooftops, streetscapes, parking lots, sidewalks, and medians. LID is a versatile approach that can be applied equally well to new development, urban retrofits, and redevelopment / revitalization projects.

2) LID Provides many environmental and economic Benefits

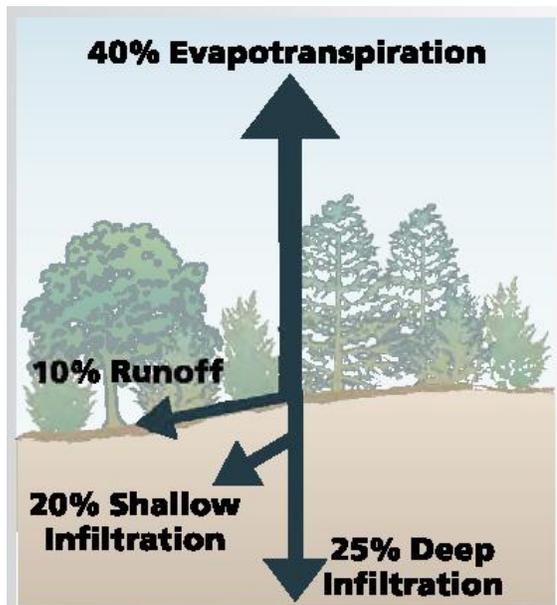
- Improved Water Quality. Stormwater runoff can pick up pollutants such as oil, bacteria, sediments, metals, hydrocarbons and some nutrients from impervious surfaces and discharge these to surface waters. Using LID practices will reduce pollutant-laden stormwater reaching local waters. Better water quality increases property values and lowers government clean-up costs.
- Improved Groundwater Recharge. Runoff that is quickly shunted through storm sewers into Storm ponds and ultimately in water courses cannot soak into the ground. LID practices retain more rainfall on-site, allowing it to enter the ground and be filtered by soil as it seeps down to the water table.
- Reduced Number of Costly Flooding Events. In communities that rely on ditches and drains to divert runoff to local waterways, flooding can occur when large volumes of stormwater enter surface waters very quickly. Holistically incorporating LID practices reduces the volume and speed of stormwater runoff and decreases costly flooding and property damage. Restored Aquatic Habitat. Rapidly moving stormwater erodes stream banks and scours stream channels, obliterating habitat for fish and other aquatic life. Using LID practices reduces the amount of stormwater reaching a surface water system and helps to maintain natural stream channel functions and habitat.



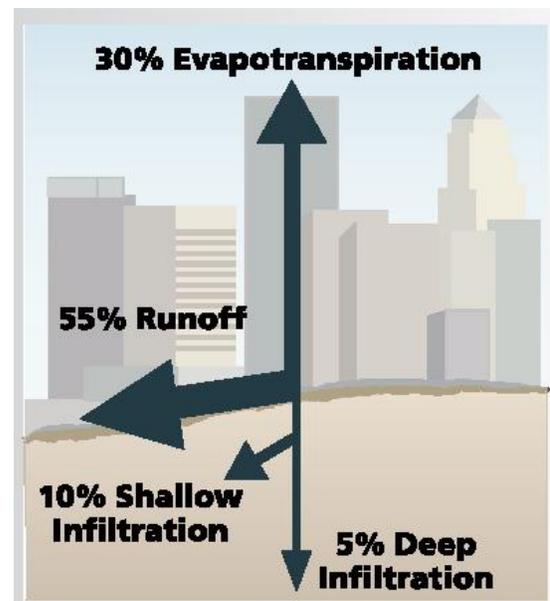
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- Enhanced Neighborhood Beauty. Traditional stormwater management infrastructure includes unsightly pipes, outfalls, concrete channels and fenced basins. Using LID broadly can increase property values and enhance communities by making them more beautiful, sustainable and wildlife friendly.

When implemented broadly, LID can also mitigate the urban heat island effect (by infiltrating water running off hot pavements and shading and minimizing impervious surfaces), mitigate climate change (by sequestering carbon in plants), save energy (from green roofs, tree shading, and reduced/ avoided water treatment costs), reduce air pollution (by avoiding power plant emissions and reducing ground-level ozone), increase property values (by improving neighborhood aesthetics and connecting the built and natural environments), and increase groundwater recharge, potentially slowing or reversing land and well field subsidence.



Typical Pre-Development
Stormwater Flows



Typical Post-Development
Stormwater Flows with No LIDs

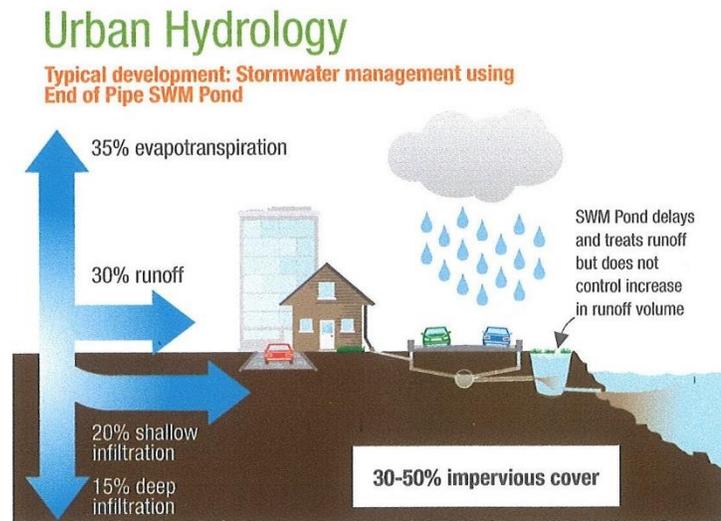


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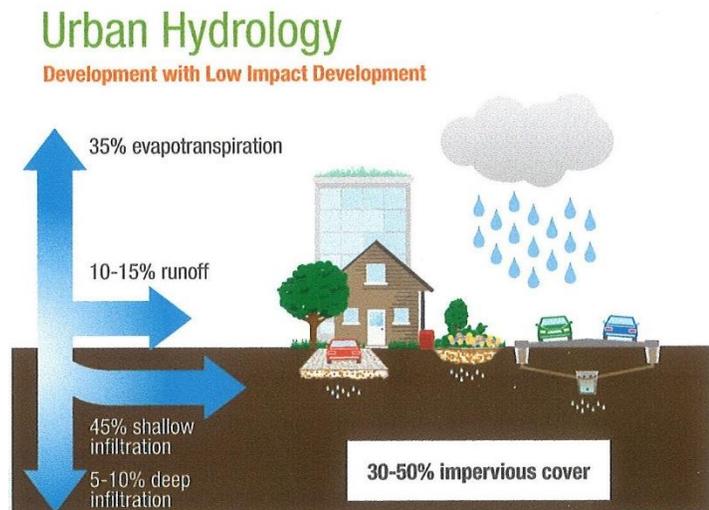
**Typical Natural Ground
Pre-Development**



**Typical Urban
Development without
LID's**



**Typical Urban
Development with
LID's**





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- 3) Although not mandated by MOECC requirements, LIDs are being heavily promoted by most Conservation Authorities including Nottawasaga Valley (NVCA), Credit Valley (CVC), Toronto Region (TRCA) and Lake Simcoe (LSRCA) for new developments.
- 4) LIDs will be implemented throughout the Midhurst Secondary Plan to achieve:
 - The ability of the stormwater management system to hold back the first 25 mm of storm runoff for a period of 48 hours.
 - Reduce the Post-Development phosphorous loading to below Pre-Development loading levels, such that when the additional phosphorous load from the new Wastewater Treatment Plant (WWTP) is included, there shall be no net increase.
 - The ability of the stormwater management system to infiltrate back into the ground, close to the source, the first 20 mm of rainfall while also ensuring a healthy hydrologic cycle.
- 5) In summary the implementation of Low Impact Development measures through the Midhurst Secondary Plan is an environmentally sound technology and economically sustainable approach to reduce the impacts of development and help to protect the local environment, protect public health, and improve community livability.